

**ABSTRACT**

A method, system, computer program product, and protocol for digital rendering over a network is described. Rendering resources associated with a project are stored in a project resource pool at a rendering service site, and for each rendering request received from a client site the project resource pool is compared to current rendering resources at the client site. A given rendering resource is uploaded from the client site to the rendering service only if the project resource pool does not contain the current version, thereby conserving bandwidth. In accordance with a preferred embodiment, redundant generation of raw rendering resource files is avoided by only generating those raw rendering resource files not mated with generated rendering resource files. Methods for reducing redundant generation of raw resources are also described, as well as methods for statistically reducing the number of raw resource files required to be uploaded to the rendering service for multi-frame sessions. The preferred embodiments are particularly advantageous for remote rendering services at a different site from the client and connected across the Internet or a Wide Area Network, but may also be applied where the rendering service is co-located with the client site and connected thereto by a Local Area Network (LAN).